

REMARKS/ARGUMENTS

Applicant thanks the Examiner for the interview of August 16 in which the Examiner indicated that the claims, as amended, overcome the prior art of record.

The Examiner objects to claims 43 and 67 under 37 CFR 1.75(c). The claims have been amended to overcome these objections.

The Examiner objects to claims 49 and 50 as being of improper dependent form under 37 CFR 1.75©. These claims have been canceled.

The Examiner rejects claims 48, 51, and 72 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicants disagree. The specification does provide a standard by which the specific meaning of “substantially” can be measured. It is understood by any computer programmer that machine code is executed serially, step-by-step. It is commonly not executed “simultaneously.” The use of “substantially simultaneously, captures this concept. The embedded voice commands and associated code are not executed at the same time but sequentially and serially. It is obvious to a skilled programmer that the processing time required for such execution is on the order of fractions of a second. Thus, a standard by which “substantially” can be measured is obvious from the specification. *See* Figs. 2-3, which show the serial nature of execution of layered or embedded voice commands.

The Examiner rejects claims 38-40, 43, and 49 under 35 U.S.C. § 102(b) as being anticipated by Peck et al. (U.S. 5,748,843); claim 41 under 35 U.S.C. § 103(a) as being unpatentable over Peck et al. in view of Fitzpatrick et al. (U.S. 5,671,328); claims 42, 45, 48, 50-

54, 56, 58, 61-64, 66-67, 69, and 72 under 35 U.S.C. §103(a) as being unpatentable over Peck et al. in view of Johnson (U.S. 5,835,571); claims 44, 46, and 47 under 35 U.S.C. §103(a) as being unpatentable over Peck et al. in view of Davis (U.S. 6,816,837); claims 55 and 65 under 35 U.S.C. §103(a) as being unpatentable over Peck et al. in view of Fitzpatrick et al. (U.S. 5,671,328); claims 57, 59-60, 68, 70, and 71 under 35 U.S.C. §103(a) as being unpatentable over Peck et al. in view of Johnson and in further view of Davis; and claims 73-74 under 35 U.S.C. §103(a) as being unpatentable over Peck et al. in view of Johnson and in further view of Hashimoto et al. (U.S. 5,632,002).

Applicant respectfully traverses the Examiner's rejections. The above-cited references fail to teach or suggest at least the following italicized features of the independent claims:

38. A method, comprising:
(a) receiving at least a first voice command;
(b) determining whether the at least a first voice command corresponds to a macroinstruction having a respective set of *embedded* executable instructions;
(c) when the at least a first voice command corresponds to a macroinstruction, executing the respective set of instructions, the respective set of instructions corresponding to a plurality of further voice commands;
(d) *when the at least a first voice command does not correspond to a macroinstruction, determining whether the at least a first voice command corresponds to a nonmacroinstruction; and*
(e) *when the at least a first voice command corresponds to a nonmacroinstruction, executing the nonmacroinstruction, wherein the nonmacroinstruction has a respective set of executable instructions and wherein the first voice command can correspond both to the macroinstruction and at least one of the further voice commands.*

51. A telecommunications system, comprising:
a switching system operable to configure and effect desired connections;
a voice recognition module operable to identify voice commands and macroinstruction names spoken by a user;

a macrolibrary operable to store macroinstructions and associated macroinstruction names;

a voice agent operable to (a) receive identified voice commands and macroinstruction names from the voice recognition module, (b) associate the identified voice command and macroinstruction name with the one or more corresponding sets of instructions, when an identified macroinstruction name is received, cause the performance of at least one work item associated with the one or more sets of instructions corresponding to the identified macroinstruction, wherein a set of instructions corresponding to a macroinstruction comprises a set of *embedded* voice commands, the set of voice commands having a plurality of voice commands and, for each voice command, a respective set of instructions and wherein, when an identified macroinstruction name is received, each instruction in the respective set of instructions is executed at least one of substantially simultaneously and simultaneously (d) receive at least a first voice command; (e) determine whether the at least a first voice command corresponds to a macroinstruction having a respective set of instructions, the set of instructions corresponding to a single voice command; (f) *when the at least a first voice command corresponds to a macroinstruction, execute the respective set of instructions, the respective set of instructions corresponding to a plurality of further voice commands;* (g) *when the at least a first voice command does not correspond to a macroinstruction, determine whether the at least a first voice command corresponds to a nonmacroinstruction; and (h) when the at least a first voice command corresponds to a nonmacroinstruction, execute the nonmacroinstruction, wherein the first voice command can correspond to both the macroinstruction and at least one of the further voice commands.*

62. A telecommunication system, comprising:

a voice agent operable to (a) receive at least a first voice command; (b) determine whether the at least a first voice command corresponds to a macroinstruction having a respective set of *embedded* executable instructions; (c) when the at least a first voice command corresponds to a macroinstruction, execute the respective set of instructions, the respective set of instructions corresponding to a plurality of further voice commands; (d) *when the at least a first voice command does not correspond to a macroinstruction, determine whether the at least a first voice command corresponds to a nonmacroinstruction, the nonmacroinstruction having a respective set of executable instructions and corresponds to one voice command; and (e) when the at least a first voice command corresponds to a nonmacroinstruction, execute the nonmacroinstruction, wherein the first voice command can correspond both to the macroinstruction and at least one of the further voice commands.*

The present invention is directed to a voice portal that uses voice macros to invoke a number of discrete voice commands by speaking the word or phrase corresponding to the voice macro. In one configuration, the voice portal first determines whether a spoken word or phrase matches one or more sets of macroinstructions in the macrolibrary and second, if the word or phrase is not in the macrolibrary, processes the spoken work or phrase as a non-macroinstruction. A macroinstruction or macrostatement or set of macroinstructions or macrostatements is an executable instruction or set of executable instructions that represents and/or is associated with one or more other executable instructions while a "nonmacroinstruction" is an executable instruction or a set of executable instructions that do not qualify as a macroinstruction or set of macroinstructions. For example, a macroinstruction is often composed of a number of nonmacroinstructions. By first determining if the word or phrase is in the macrolibrary and then processing the voice command as a nonmacroinstruction, the voice agent prevents system conflicts where a word or phrase references both macro- and nonmacroinstructions. In another configuration, the voice portal, when a macroinstruction is named by a user, executes the instructions corresponding to the macroinstruction simultaneously or substantially simultaneously.

Peck et al.

Peck et al. is directed to speech recognition control of apparel manufacture equipment. The operator can use a macro definition voice reference pattern to invoke verbally a series of

digital control signals. That is, the computer, in response to the operator's command, records the order and timing of a series of verbal commands and executes the command sequence, in the proper order and at the proper timing, in response to a single operator command. Peck et al. uses a library of stored voice reference patterns and a separate operator specific library. The operator specific library includes both macroinstructions and nonmacroinstructions. Macroinstruction names are associated with a macro memory position instead of a digital control signal. It appears that nonmacroinstruction names or voice commands must be different from macroinstruction names to avoid system conflicts.

To invoke the macro capability, the operator must laboriously invoke a "macro" or learn mode and, to deactivate the capability, deactivate the learn mode. (Col. 12, lines 39-43.) In other words, the architecture of Peck et al. only searches for macroinstructions when and if the "learn" phrase is spoken by the user. When the "learn" phrase is spoken, it does not search the nonmacroinstruction or digital control signal portion of the operator specific library. (Col. 12, lines 32-67.)

Macroinstructions are created by activating the macro capability when the computer 14 is already in learn mode. In that event, the computer records the address, or position, of the digital control signal corresponding to the matched digitized voice reference pattern and the time between its selection and that of the prior digital control signal.

The Examiner refers to col. 11, line 65, to col. 12, line 54, as teaching executing a nonmacroinstruction when the first voice command does not correspond to a macroinstruction

and executing the nonmacroinstruction when the first voice command corresponds to the nonmacroinstruction. Applicants disagree. Peck et al. teaches that the treatment of a voice command as a macroinstruction or nonmacroinstruction is mode-driven. The architecture of Peck et al. only looks at whether a voice command is a macroinstruction when the "learn" mode is in effect. It only looks at whether a voice command is a nonmacroinstruction when the "learn" mode is *not* in effect. (Col. 12, lines 32-54.) Peck et al. never performs the step of determining whether a voice command is a macroinstruction and, if not, whether the voice command is a nonmacroinstruction sequentially as claimed.

The remaining references fail to overcome the deficiencies of Peck et al.

Johnson

Johnson is directed to a system for automatically interfacing a telephone user to an automated telephone service. Johnson teaches away from traditional macros. (Col. 2, lines 14-17.) A macro is recorded, during a user's verbal negotiation of a menu, by saving a button type that is determined by the duration of the telephone button pressed, the button, and the time since press of the previous entry. In this manner, the user can invoke the saved recording of interface activity at any time so that the automated telephone service is interfaced to in an automatic manner. Thus, to record a macro the user must interface to an automated service and record the interaction. A macro can be invoked by button or voice.

The recording of the interaction is not a recording of voice commands, as claimed, but of DTMF signals. Buttons pressed along with time information between pressing of buttons is saved. Two types of DTMF buttons may be saved. A button of type IMMEDIATE will be used to the service without regard to prompting. A button type of WAIT will be issued to the service only after a moment of silence is detected. (Col. 3, lines 52-62.) When the desired macro is captured and the telephone macro is saved to a desired invocable sequence.

For example, multiple stock trades may be accomplished by repeating the following scenario: (1) a first macro to dial the telephone number and navigate to the desired point in the automated trading service menu; (2) a manually entered stock symbol; (3) a second macro to complete the trade; and (4) a third macro to navigate back to a navigation path where step 2 can be performed again. The macro is in a library of the contact center. It is not provided by the caller. This prevents the caller from waiting while a recorder plays a verbal response to each of the prompts, as described in Johnson.

Fitzpatrick et al.

Fitzpatrick et al. is directed to a method and processing system for automatically creating voice processing template entries. A number of commands or complex macro are assembled with one of the commands having a voice recognition criteria component associated with it. The system counts the occurrences of the commands, assembles voice recognition criteria

components associated with the commands, and, when the count exceeds a selected minimum, constructs a voice recognition template entry or complex macro by associating the assembled voice recognition criteria components with the assembled commands. Each voice recognition criteria component of the template is associated with a conglomeration attribute (e.g., START, END, and NONE) and a macro and optional comment string. The voice recognition criteria component for each complex macro may be a concatenation of the separate voice recognition criteria components of the simpler macros from which the complex macro is created. (Col. 3, lines 13-20, and col. 4, lines 43-56.)

Davis

A voice controlled capture device, such as a flatbed scanner, hand-held scanner, or digital scanning camera, contains a processor that receives voice macros to control its operation. The device receives voice input, digitizes and sends the input to a second processor in a host computer system where speech recognition software interprets the voice input to select a macro and returns commands from the macro to the capture device where they are executed. Using an interface or macro recorder within the capture device and the speech recognition software within the host computer, the user can create voice macros incorporating individual voice commands. Davis teaches the creation, edition, and deletion of voice macros through voice interaction with the user. Regarding the process for using macros, Davis states:

Step 710 [of Figs. 7A and 7B] determines if a match was found in the comparison performed in step 708. If no match was found, then step 712 outputs an indication of no

match to the user, which may be an audible word or a specific beep pattern for a stand alone unit, or, for a connected unit, a message displayed on graphics display 210 with or without an audible beep pattern. Control then returns to step 702 where input for a next voice macro command is received.

(Col. 9, lines 42-50; *see also* col. 10, lines 1-10, and 54-67.)

Hashimoto et al.

Hashimoto et al. is directed to a speech recognition interface system capable of handling a number of application programs simultaneously and realizing convenient speech input and output modes which are suitable for applications in the windows systems and speech mail systems. At cols. 37 and 38, Hashimoto et al. discloses a speech recognition interface system for accessing voice mail. Voice macros are disclosed at col. 38.

Accordingly, the pending claims are allowable.

The dependent claims provide further reasons for allowance.

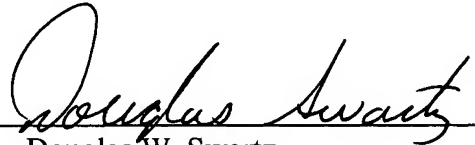
By way of example, dependent claim 44 is directed to the use of a macroinstruction having one or more embedded macroinstructions. In other words, to invoke a second macroinstruction the name of a first macroinstruction must be spoken. This is not taught by Davis. Davis, at col. 2, lines 21-41, teaches nothing more than the structure of a conventional macro, namely a set of embedded nonmacroinstructions (e.g., "set color black and white", "set dpi 150", "set sharpening medium", "set type text", "scan", and "send to word" are the nonmacroinstructions and "OCR" is the macroinstruction). (See also claims 57 and 68.)

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Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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